APPENDIX G
Newfield Exploration Company
Greater Monument Butte Unit
Reclamation and Weed Management Plan

INTRODUCTION

The purpose for this document is to amend the previously approved *Newfield Exploration Company Castle Peak and Eight Mile Flat Reclamation and Weed Management Plan* (Newfield 2009) which was written to comply with Instruction Memorandum No. GR-2009-002. This amendment is intended to more accurately comply with revised BLM Instruction Memorandum UTG000-2011-003 regarding BLM adoption of the 2011 revised *Green River District Reclamation Guidelines.* In addition, this amendment more accurately defines Newfield's reclamation techniques and monitoring efforts that have been refined to more adequately address these policy changes. The need of this amendment came from examining recent NEPA analyses and BLM Decision Records that referred to conformance with Newfield's previously referenced plan which is no longer consistent with the current BLM policy.

RELATION TO STATUTES, REGULATIONS, AND GUIDELINES

The proposed reclamation plan amendment is consistent with the following Federal Statutes, Regulations, Guidelines and Decisions:

- Onshore Oil and Gas Order Number 1 Section III.B.4J. *Plans for Surface Reclamation*
- *Surface Operating Standards for Oil and Gas Exploration and Development* or "Goldbook" (BLM and USFS 2007)
- Standards for Rangeland Health and Guidelines for Grazing Management for BLM Lands in Utah (BLM 1997)
- Green River District Reclamation Guidelines 2011 IM UTG000-2011-003
- Record of Decision for Newfield Exploration Company's Castle Peak and Eightmile Flat Oil and Gas Development Environmental Impact Statement (2005)

APPLICABLE AREA

This Reclamation Plan Amendment would apply to BLM lands within the Greater Monument Butte Unit and outlines procedures and measures that would be taken to initiate reclamation on all areas that have been authorized for disturbance applicable to *IM UTG000-2011-003.*

The Green River Reclamation Guidelines define **Interim Reclamation** as ***the minimizing of the footprint of disturbance by reclaiming all portions of the well site not needed for safe production operations. The portions of the well site not needed for operational and safety purposes would be recontoured to a final appearance that blends with the surrounding topography. Topsoil would be spread over these areas. The operator would spread the topsoil over the entire location except where an all-weather surface, access route or turnaround is needed. Production facilities should be clustered or placed offsite to maximize the opportunity for interim reclamation. Any incidental use on interim reclamation may require restoration of damage. This may require recontouring and seeding of the damaged area.***

As oil and gas operations may result in surface disturbing activities beyond those described in the Vernal BLM's **Interim Reclamation** definition, Newfield would like to define their interim reclamation capabilities and limitations as part of this amendment.

Areas of Interim Reclamation Potential

- All pipeline corridors resulting in surface disturbance
- All reserve pits
- Portions of well pads following installation of flowlines that would allow removal of separators, heater-treaters, and/or storage tanks
- Portions of the well pad not needed for workover and production operations (i.e., minimum of 1 ac)

RECLAMATION STRATEGY

In addition to general footprint minimization, the following reclamation actions would be conducted by Newfield to meet the short term goal: (***immediately stabilize disturbed areas and to provide the necessary conditions to achieve the long term goal***); and long term goal: (***facilitate eventual ecosystem reconstruction by returning the land to a safe, stable, and proper functioning condition***); as well as the eight reclamation objectives and associated actions outlined in the 2011 Green River District Reclamation Guidelines.

Objective 1 - Establish a desired self-perpetuating plant community.

The objective is to attain 75% basal cover based on similar undisturbed adjacent native vegetative community, and comprised of desired species and/or seeded species within 5 years of initial reclamation action. Species diversity should approximate the surrounding undisturbed area. For areas that are in poor range condition due to past land management practices, then the species diversity should approximate the site as described in the NRCS Ecological Site description. However if after three (3) growing seasons there is less than 30% of the basal cover based on similar undisturbed native vegetative community, then the Authorized Officer may require additional reclamation efforts.

Seed Mix

In cooperation with the BLM Authorized Officer, Newfield would determine a seed mix for the project area. A diversified selection of native seeds found local to the project area would be used. Locally harvested seed would be sought to the greatest extent possible; however seed selection would largely be influenced by market availability. Non-native species would be used in moderation and mixed in low concentrations with natives to assist in initial plant establishment. All use of non-native seed would be authorized by BLM Authorized Officer.

Seed Storage

Seed would be stored in a cool dry place ensuring proper storage required to keep seed viable. All seed utilized would be tested prior to application to ensure BLM specifications for pure live seed (PLS), purity, noxious weeds, etc. have been met. Seed tags would be provided to the Authorized Officer as requested.

Seed Placement

Proper care would be taken to plant assorted sized seeds to proper depths, usually 5 times the width of the seed. Seed would be placed at the correct depth providing good contact between seed and soil. The correct depth of planting would be deep enough to allow seed to take up water, to protect it from desiccation or birds, and to prevent it from germinating with light rains, yet shallow enough to allow the seedling to reach the surface before depleting food reserves or being attacked by insects or disease.

Seedbed Preparation

Newfield would alleviate compaction for root establishment prior to seeding. Seedbeds would also be constructed to physically hold as much water as possible. Rippers, harrows, disks, chisel plows or similar equipment would be used to loosen soil and alleviate compaction. After loosening to desirable depths and after topsoil is reapplied soils may be imprinted and or pocketed. Pockets create microclimates which protect small emerging seedlings, increase soil holding capacity, and decrease runoff and erosion. Imprinting has been found to be successful in the arid climates of Utah. "Seedling emergence was improved by imprinting compared to drilling in Utah." (Clary and Johnson 1983)

Seeding Method

Various seeding techniques including, broadcasting, broadcast/harrow, broadcast/press, and drilling would be used to place seed to optimal depths. Seeding rates would range from 18 to 20 PLS lbs per acre or as prescribed by BLM Authorized Officer.

Seeding Season

Newfield would apply seed between late fall and early spring depending on moisture, ground temperature, and snow cover. Newfield has proven success with winter seeding. Certain species of seed require early spring/winter application for optimal effectiveness.

Mulching

In some cases, Newfield may apply certified weed free straw and crimped in attempt to capture and hold moisture, stabilize soil, provide organic matter, and protect seed. Newfield may also grow an annual grain to reestablish and stabilize soils in late spring/summer months. Such efforts would combat weed growth, supply subsurface organic matter, oxygenate soil, alleviate compaction, and minimize runoff.

Slopes

Areas in excess of 40% slope or are excessively rocky would be amended as safely as possible. Seed rates would in these areas may be increased as necessary. Seed may be broadcast and covered by harrowing, drag bar, roller, or as determined effective and safe by Newfield and BLM Authorized Officer.

Amendments

If initial reclamation activities are unsuccessful, Newfield would amend soils to meet the long-term goals of restoration. Potential soil amendments may include: topsoil, compost, woodchips, wood-pulp, straw, elemental sulfur or other safe acids, gypsum, fertilizer, slow release fertilizer, humus, or any other amendments which prove effective in combating saline/sodic soil characteristics typical of harsh western desert environments.

As determined and in cooperation with the BLM Authorized Officer, fencing may be used to exclude livestock/big game grazing until seeded species have become established. Fencing would be constructed to BLM standards.

Objective 2 - Ensure slope stability and topographic diversity

Newfield would reconstruct disturbed areas to the approximate original contour or to assure the site looks natural or blends with the surrounding terrain.

Where applicable, Newfield would imprint, step down, or lesson slope on steep terrain in effort to control erosion. Perimeter berms may be used on well pads to control site rainwater runoff erosion of site fill material. Summer grown mulch and imprinting may also be considered to help control erosion while simultaneously competing against weeds between desirable seeding windows.

Objective 3 - Reconstruct and stabilize altered water courses and drainage features

Newfield would reconstruct drainage basins to have similar features and hydraulic characteristics found in nearby properly functioning drainages. Pads would be designed to divert water flow around, to keep water off, and to redirect the water back into the established natural watercourse.

Objective 4 - Ensure the biological, chemical, and physical integrity of the topsoil resource during all phases of construction, operation, and reclamation.

BMP's designed to minimize and prevent erosion, compaction, and contamination of the topsoil resource should be used to maintain the topsoil resource.

Topsoil Stripping/Storage

Prior to excavation of subsoil all topsoil would be stripped. Topsoil would be windrowed parallel to disturbance and great care would be taken to segregate topsoil from subsoils. During topsoil stockpiling Newfield would avoid slopes, natural drainage ways, and traffic routes. All topsoil stored beyond one season would be gently compacted to an acceptable height to ensure viability and imprinted/mulched and seeded to reduce erosion and to ensure the long-term viability of the resource. Newfield would identify topsoil storage with appropriate signage to prevent improper use.

Redistribution of Topsoil

To the greatest extent possible, soils would be reapplied as they were extracted. With permission of the BLM Authorized Officer topsoil may be moved from site while still viable to use on similar sites with similar soil characteristics.

Objective 5 - Re-establish the visual composition and characteristics to blend with the natural surroundings.

Newfield would reconstruct disturbed areas to the approximate original contour or to assure the site looks natural or blends with the surrounding terrain.

Objective 6 - Control the occurrences of noxious weeds and undesirable invasive species by utilizing principles of integrated weed management including prevention, mechanical, chemical, and biological control methods.

A pre disturbance noxious weed inventory shall be conducted on all surface disturbing projects to determine the presence of noxious weeds prior to beginning the project, and to determine whether treatment is needed prior to disturbance. If noxious weeds are found a report including:

- A GPS location recorded in North American Datum 1983
- Species
- Canopy Cover or number of plants
- General infestation size (estimate of square feet or acres)

Information shall be provided to the BLM Weed Coordinator prior to the disturbance occurring, and also documented in the annual reclamation report.

Newfield would conduct weed management and control by using a process called Integrated Weed Management (IWM). Integrated Weed Management is a process at which all possible means of weed control are utilized. The processes within IWM include cultural, mechanical and chemical methods.

- Cultural methods include changing operations where possible to inhibit weed seed distribution through human means. Cultural changes could include quarantining certain "weedy" areas to only necessary traffic until treatments are completed, and washing vehicles more frequently.
- Mechanical methods may include mowing, tilling, or hand weeding small area of weed infestations.
- Chemical methods would include using commercial herbicides where required to keep weed infestations under control.

The use of grown mulch on reclaimable sites would effectively combat weeds during late spring/summer months.

Newfield would control any noxious and/or invasive weeds outbreak that is directly attributed to Newfield's activities.

An approved Pesticide Use Proposal (PUP) would be obtained for all planned herbicide applications. Herbicides would be applied by a certified applicator with a current Utah Pesticide Applicators License. A Biological Use Proposal is required for new bio-control agents in the Field Office area.

Objective 7 - Manage all waste materials

Newfield would segregate waste materials from the subsoil and topsoil.

All waste materials transported and disposed of off-site, would be placed in an authorized disposal facility in accordance with all local, State and Federal requirements.

Objective 8 – Conduct monitoring that is able to assess the attainment or failure of reclamation actions

Monitoring

Newfield would adhere to the Green River Guidelines 2011 monitoring guidelines as stated:

Monitoring methodology should be an approved BLM method designed to monitor basal vegetative cover. Monitoring criteria:

- Qualitative monitoring data would be collected after the 2nd growing season following reclamation actions. Quantitative data would be collected after the 3rd and 5th growing

seasons, and the year that the applicant determines that reclamation meets the long term objective of 75% basal cover as compared to the reference site.

- In areas where the reference site data shows less than 5% basal cover, and is due to past land management practices, then the objective for the disturbed area that is being reclaimed would be 5% basal cover after the third growing season, and 8% after the fifth growing season.
- Any one species should not account for more than 30% of the total measured basal cover.
- All ROW's would include a monitoring transect per each NRCS ecological site that the ROW passes through that is greater than 0.75 miles.
- General view photographs of the reclaimed areas would be submitted with the quantitative data. Photographs would be taken at the same photo point each time, and as close to the same time of year as previous photos were taken to reduce differences in plant growth characteristics.

In cooperation with the Authorized Officer, an undisturbed reference site should be selected prior to monitoring. One reference site may be used for multiple reclamation sites as long the site potentials are similar. Reference site criteria:

- Reference sites shall be permanently marked, and the location recorded by Global Positioning System (GPS) North American Datum 1983.
- For ROW's a reference site shall be established in each unique NRCS Ecological Site that the ROW passes through.
- A photograph consisting of a general view of the marked reference site should be submitted with the Reference site data.

Newfield would document and report monitoring data and recommend revised reclamation strategies, if necessary. Newfield would submit an annual reclamation report to the Authorized Officer. The report would document compliance with all aspects of the reclamation objectives and standards.

Newfield would implement revised reclamation strategies as needed.

Newfield would repeat the process of monitoring, evaluating, documenting/reporting, and implementing, until reclamation goals are achieved, as determined by the Authorized Officer.

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